SONY

3-753-183-21 (1)

Stereo Power Amplifier

XM-5540F

Operating Instructions page 2

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Mode d'emploi page 14

Avant la mise en service de l'appareil, lire attentivement ce mode d'emploi et le conserver pour toute référence ultérieure.

©1991 by Sony Corporation

English

Table of Contents

Features 2
Precautions 3

Installation 4
Location and function of controls 5
Connections 6
Connection of a 4-speaker system 7
Connection of a 3-speaker system 9
Connection of a 2-speaker system 10
Level adjustment control 11

Specifications 12

Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. XM-5540F Serial No. _____

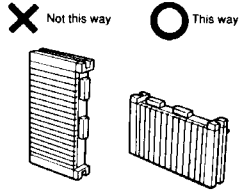
Features

- Provided with a built-in crossover network with the High Pass Filter (HPF=80 Hz) and Low Pass Filter (LPF=80 Hz).
- Maximum power output of 100 watts per channel
- Power output of 55 watts per channel (20-20,000 Hz, 0.08%, 4 ohms) Ad Hoc Committee standard
- Wide dynamic range and low distortion (less than 0.005%)
- A protection circuit is provided.
- Pulse power supply* for stable, regulated output power

* **Pulse power supply**
This amplifier employs pulse techniques in its power supply section. The use of this original light-weight power supply system provides a high-voltage, a high-efficiency power supply. That is highly regulated under variations in the automobile's electrical voltage.

Precautions

- This unit is designed for negative ground 12 V DC operation only.
- The nameplate indicating operating voltage, etc. is located on the bottom exterior.
- Use speakers with an impedance of 2 to 8 ohms.
- Avoid installing the unit where:
  — It would be subject to high temperatures, such as from direct sunlight or from hot air from the heater.
  — It would be exposed to rain or moisture.
  — It would be subject to dust or dirt.
- If your car is parked in direct sunlight and there is a considerable rise in temperature inside the car, allow the unit to cool off before operating.
- When installing the unit vertically, make sure that the fins of the heat sink are vertical to the floor.



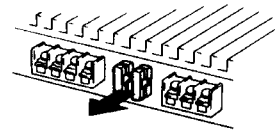
- When installing the unit horizontally, be sure not to cover the fins with the floor carpet and so on.
- If this unit is placed too close to the car radio, an interference may occur. In this case, separate the amplifier from the car radio.
- If no power is being supplied to the cassette player or tuner, check the connections.
- This power amplifier employs a protection circuit* to protect the transistors and speakers if the amplifier malfunctions. Do not attempt to test the protection circuits by covering the heat sink or connecting improper loads.

If you have any questions or problems concerning your unit that is not covered in this manual, please consult your nearest Sony dealer.

Fuse Replacement

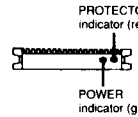
If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In this case, consult your nearest Sony dealer.

Warning
Use the specified ampere fuse.
Use of a higher amperage fuse may cause serious damage.



***Protection circuit**
This amplifier is provided with a protection circuit which operates in the following cases:
- the unit is overheated
- a DC current is generated
- the speaker terminals are short circuited

When a protection circuit activates, the red indicator lights up and there will be an abrupt loss of sound from the speakers. If this happens, turn off the connected equipment and take out the cassette tape or disc and determine the cause of the malfunction. If the amplifier becomes overheated, wait until the unit cools off.



Installation

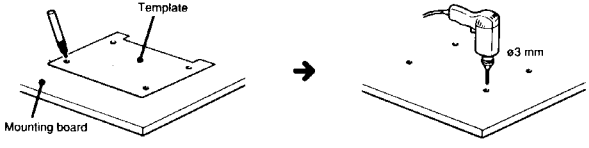
Before Installation

- Choose the mounting location carefully so that the unit will not interfere with the normal driving functions of the driver and that the unit will not be exposed to direct sunlight or hot air from the heater.
- Do not install the unit under the floor carpet, where the heat dissipation from the unit will be considerably impaired.

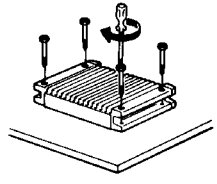
Trunk Installation

Prepare a suitable mounting board to install the unit securely.

1 **Mark the four bolt holes on the mounting board using the template (printed on the carton), then drill the holes (3 mm dia.).**



2 **Secure the unit to the board with the supplied screws.**



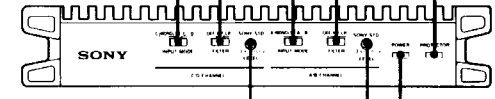
3 **Secure the board in the trunk compartment.**

Location and Function of Controls

INPUT MODE
C(MONO)/A(MONO): monaural mode for the 2-speaker system
ST: stereo mode for the 4-speaker system or the 3-speaker system
C+D/A+B: mix mode for mixing A(C) and B(D) channels

FILTER (Crossover network switch)
OFF: High Pass filter and Low Pass filter are off.
HP: High Pass filter is on.
LP: Low Pass filter is on.

PROTECTOR
(Protection circuit indicator)(red)



POWER (Power supply indicator) (green)
To indicate that power is supplied.

LEVEL (Level adjustment control)

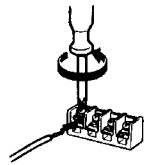
Connections

Caution

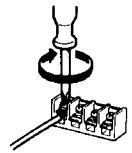
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the red power input lead only after all other leads have been connected.
- **Be sure to connect the ground wire of the unit securely to a metal point of the car. A loose connection may cause a malfunction of the amplifier.**
- Be sure to use speakers with adequate power handling capacities. If you use speakers with small capacity, they will be damaged.
- Do not connect the − terminal of the speaker system with the car chassis, and do not connect the − terminal of the right speaker with that of the left speaker.
- If your car is equipped with computer system for navigation or some other purposes, be sure not to remove the ground wire from the car bettery. If you disconnect the wire, the memory of the computer may be erased. To avoid short circuits when making connections, try to connect the +12 V power input lead only after all other leads have been connected.

Make terminal connections as illustrated below.

1 Loosen the screw of the terminal and wind the stripped cord around the screw.

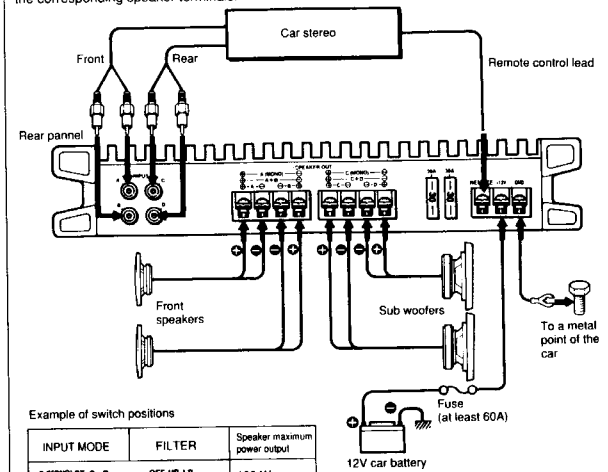


2 Tighten the screw down with a screwdriver. Make sure that the cord cannot be pulled out.



Connection of a 4-speaker System

Before making connections, remember that the input signal to each jack (A, B, C, D) is output from the corresponding speaker terminals.



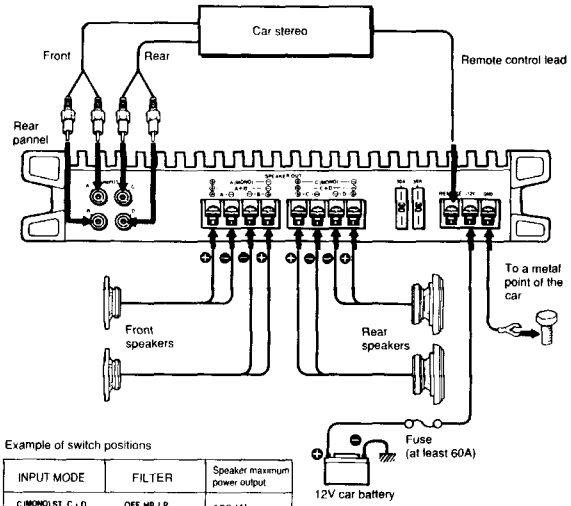
Example of switch positions

INPUT MODE	FILTER	Speaker maximum power output	
C (MONO) ST C • D INPUT MODE	OFF HP LP FILTER	100 W	C/D CHANNEL
		100 W	
A (MONO) ST A • B INPUT MODE	OFF HP LP FILTER	100 W	A/B CHANNEL
		100 W	

Notes on the 4-speaker connection

- In a 4-speaker system, set both INPUT MODE switches to the ST position. Then set the filter switches to the desired positions and connect the speaker cords to the terminals marked + – A – −, − – B – +, + – C – − and − – D – + as shown above.
- Make sure to connect the remote control lead of the car stereo to the **REMOTE terminal**.
- Use the power connecting cord with the fuse attached (at least 60 A).

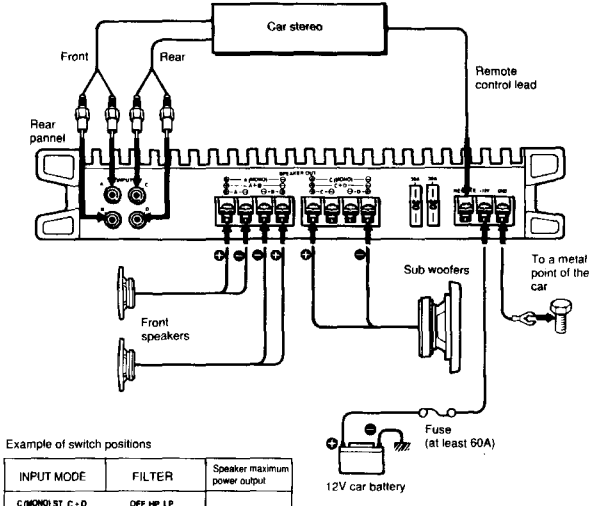
Connection of a 4-speaker System



Example of switch positions

INPUT MODE	FILTER	Speaker maximum power output	
C (MONO) ST C • D	OFF HP LP	100 W	C/D CHANNEL
INPUT MODE	FILTER	100 W	
A (MONO) ST A • B	OFF HP LP	100 W	A/B CHANNEL
INPUT MODE	FILTER	100 W	

Connection of a 3-speaker System



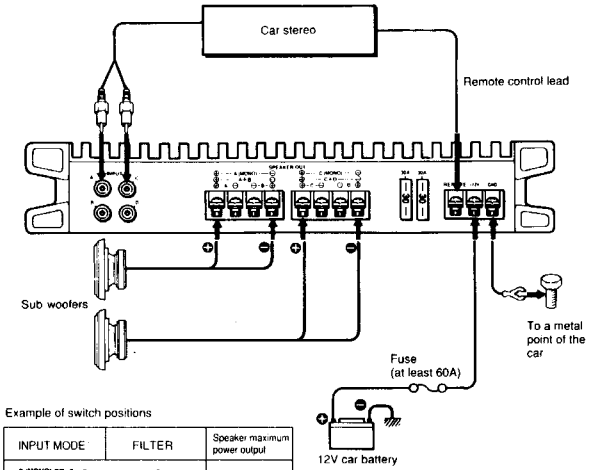
Example of switch positions

INPUT MODE	FILTER	Speaker maximum power output	
C (MONO) ST C • D	OFF HP LP	220 W	C/D CHANNEL
INPUT MODE	FILTER		
A (MONO) ST A • B	OFF HP LP	100 W	A/B CHANNEL
INPUT MODE	FILTER	100 W	

Notes on the 3-speaker connection

- In a 3-speaker system, use the A, B, C and D input jacks and set one of the INPUT MODE switches to the ST position for the 2-speaker connection and the other INPUT MODE switch to the A+B or C+D position for the 1-speaker connection. Then set one of the filter switches to the HP position for the 2-speaker connection and the other filter switch to the LP position for the 1-speaker connection. For example, connect the speaker cords to the terminals marked ⊕ – A – ⊖, ⊖ – B – ⊕ and ⊕ — C+D — ⊖ as shown above.
- Make sure to connect the remote control lead of the car stereo to the **REMOTE terminal**.
- Use the power connecting cord with the fuse attached (at least 60 A).

Connection of a 2-speaker System



Example of switch positions

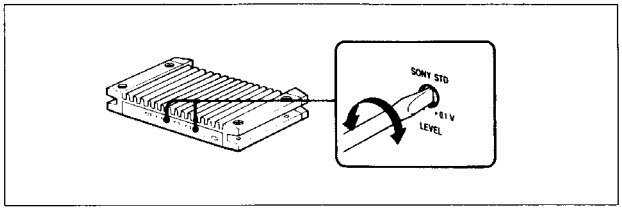
INPUT MODE	FILTER	Speaker maximum power output	
C (MONO) ST C · D INPUT MODE	OFF HP LP FILTER	220 W	C/D CHANNEL
A (MONO) ST A · B INPUT MODE	OFF HP LP FILTER	220 W	A/B CHANNEL

Notes on the 2-speaker connection

- Use the A and C input jacks only and set both INPUT MODE switches to the C(MONO) position and the A (MONO) position respectively. Then set the filter switches to the desired positions and connect the speaker cords to the terminals marked + — A(MONO) — and + — C(MONO) — as shown above.
- Make sure to connect the remote control lead of the car stereo to the **REMOTE terminal**.
- Use the power connecting cord with the fuse attached (at least 60 A).

Level Adjustment Control

The input level can be varied with this control. Use it to adjust the input sound level when using source equipment of other manufacturers. Be sure to set the control to SONY STD if the unit is connected to a SONY car stereo. Turn it to 0.1 V when the input level of the cassette car stereo or CD player seems low.



Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION 55 watts per channel minimum continuous average power into 4 ohms, both channels driven from 20-20,000 Hz with no more than 0.08% total harmonic distortion per Car Stereo Ad Hoc Committee standards.

Other Specifications

Power supply system
Pulse power supply circuitry
Input Car stereo input (phono jack)
Outputs Speaker outputs
Speaker impedance
2–8 ohms
Maximum power output
4 ch: 100 watts × 4 at 4 ohms
3 ch: 100 watts × 2 + 220 watts at 4 ohms
2 ch: 220 watts × 2 at 4 ohms
Frequency response:
8 Hz–100 kHz $^{+0}_{-3}$ dB (4 ohms)
Crossover frequency
High Pass Filter 80 Hz
Low Pass Filter 80 Hz
Crossover slope
High Pass Filter 18 dB/oct
Low Pass Filter 18 dB/oct

Harmonic distortion
0.005%
Input level adjustment range
0.1–2 V
Power requirements
12 V DC car battery (negative ground)
Current drain 36 A (at rated output)
Input remote current
5 mA
Dimensions Approx. 360 × 57 × 240 mm (w/h/d)
(14 1/4 × 2 1/4 × 9 1/2 inches)
Weight Approx. 4.9 kg (10 lb. 13 oz.)
Accessories supplied
Mounting screws (4)

Design and specifications subject to change without notice.